What is claim d is:

1. An improved apparatus for collecting, transmitting, and processing data stored in a code such as a bar code, said apparatus including a portable code reader with processing and transmitting units for radiating information in the form of electromagnetic waves, a stationary receiver physically separate from the code reader, and a data processor coupled to the stationary receiver, wherein the improvement comprises:

a network controller member having a multiplicity of communication ports thereon, said network controller member intercommunicative with said data processor at one of said communication ports;

said network controller member intercommunicative with said stationary receiver at another of said communication ports; and

said network controller member selectively operable with said data processor at one or more communication rates.

2. The apparatus of claim 1 wherein,

at least one of said communication ports selectively controllable to provide data interchange by a V.35 interface.

3. The apparatus of claim 1 wherein,

said at least two communication ports are selectively controllable to provide data interchange by a RS485 interface.

4. The apparatus of claim 1 wherein more than one host computer may be interconnected to said data communication system.

5. The apparatus of claim 1 wherein,

a number of said multiplicity of communication ports are dedicated to interconnection to host computers and the remainder of said communicative parts are interconnectable with base transceiver units.

6. In a data communication system having a plurality of mobile transceiver units communicative with a plurality of base transceiver units,

a network controller intercommunicative between the base transceiver units and one or more host computers for data interchange therebetween.

7. A data communication system having a plurality of mobile transceiver units selectively communicative with a plurality of base transceiver units, comprising:

a network controller intercommunicative between the base transceiver units and one or more host computers for data interchange therebetween;

an adapter coupled to the network controller and intercommunicative between said controller and said plurality of base transceiver units; and

said adapter providing coupling between said network controller and said base transceiver units simultaneously.

8. A radio frequency data communication system for transmission of data collected by a multiplicity of remote terminals to one or more base stations, comprising:

the multiplicity of remote terminals selectively communicative with said one or more base stations, each of said remote t rminals selectively operable in response to transmission from one of said base stations; and

each of said remote terminals independently cycling from a dormant status to an active status over predetermined time intervals when no transmission from a base station is directed to such remote terminal.

9. A radio frequency data communication system for transmission of data collected by a multiplicity of roaming terminals each having a radio transmitter to one or more base stations, comprising:

the multiplicity of roaming terminals selectively communicative with said one or more base stations, each of said roaming terminals selectively operable in response to transmission from one of said base stations; and

each of said roaming terminals maintaining the radio transceiver energized by battery power for a selected time interval, and after such selected time interval or after completion of a transmission occurring within such time interval, periodically turning the radio transceiver off for substantial time intervals to conserve battery power.

10. In a data communication system having a host computer, a plurality of intermediate bridging stations, and a plurality of mobile transceiver units, all communicative with a base station, a local area network comprising:

said plurality of intermediate bridging stations organized into an optimal spanning tree with said base station at the root.

11. The local area network of claim 10 wherein:

said local area network is capable of routing information between said host computer, said

intermediate bridges, said mobile transceivers, and said base transceiver units using RF signals.

12. The local area network of claim 10 wherein:

said optimal spanning tree is created and maintained using a backward learning technique.

13. The local area network of claim 11 wherein:

said RF signals incorporate spread spectrum technology.

14. A method of routing information in a data communication system having a host computer, a plurality of intermediate bridges, and a plurality of mobile transceiver units, all communicative with a base station, comprising the following steps:

organizing said data communication system into an optimal spanning tree with said base station at the root.

15. The method of claim 14 wherein:

said step of organizing said data communication system into an optimal spanning tree is achieved by said intermediate bridges attaching to nodes logically closest to the root node.

16. The method of claim 15 wherein:

said attached bridges use a backward learning technique to learn the correct path to route data communication between said host computer and said mobile transceiver units.

17. A method of routing information in a data communication system having a host computer, a plurality of intermediate bridges, and a plurality

of mobile transceiver units, all communicative with a base station, comprising the following steps:

(a) organizing said data communication system into an optimal spanning three with said base station at the root; and

(b) said step of organizing further comprising the step of said attached bridges using a backward learning technique to learn the correct path to route data communication between said host computer and said mobile transceiver units.

18. A method of beginning a data exchange over and RF communication link between a polling device and a sending device wherein the polling device has an interpoll gap time, comprising the steps of:

(a) identifying by the sending device that the RF communication link is clear throughout a period which is at least as long as the maximum possible interpoll gap time; and

(b) transmitting a request for poll frame by the sending device.

19. A method used by a remote terminal having an RF range for selectively attaching itself to one of a plurality of RF base stations each of which has an associated cost, a preset priority and a preset number, comprising the steps of:

(a) receiving by the remote terminal messages indicative of the signal strength of each of the base stations within RF range;

(b) discarding all messages with signal strengths below a predetermined minimum threshold level; and

(c) attaching itself to one of the plurality base station based on the cost, the signal strength of the messages, the preset priority and the preset number.

20. A method for selecting and redundantly replacing a root device when it breaks down from among a plurality of potentially root devices, each of said potential root device having a single, assigned preset number, comprising the steps of:

initially selecting the potential root device by identifying the lowest assigned preset number of the plurality of potential root devices; and

repeating said step of selecting without considering the preset number of the current selected root device, whenever the currently selected root device breaks down.

21. A method used by a remote terminal for gathering and transmitting data to one or more base stations, said method comprising the steps of:

when not gathering data, operating at a lower system clock rate so as to minimize digital noise in transmission to and reception from one or more of the base stations; and

when gathering data, operating at a higher system clock rate to increase data input.

22. A method used by a base station having both a non-directional and a programmable, directional antenna system in a radio frequency communication system having a plurality of base stations and roaming terminals, said method comprising the steps of:

(a) transmitting using a non-directional antenna system when communicating with one of a plurality of roaming terminals; and

(b) programmably adjusting the transmission power and direction of a directional antenna system and transmitting using the directional antenna system when communicating with another of the plurality of base stations.

23. In a data communication system having a plurality of mobile transceiver units communicative with a plurality of base transceiver units,

a network controller intercommunicative between the base transceiver units and one or more host computers for data interchange therebetween, and having port means providing interface at a relatively low data rate and at a relatively high data rate.

24. The network controller of claim 23 wherein said controller includes means for interconnection of existing installed mobile transceiver units therewith.

25. The network controller of claim 24 wherein said controller communicates with said base transceiver units by an RS232C interface.

26. The network controller of claim 23 wherein said network controller providing a multiplicity of data communication ports thereon, at least two of said communication ports being software-controllable to select among a plurality of interface means.

27. The invention of claim 26 wherein at least one of said communication ports being communicative with a network of serially interconnected base transceiver units over a single twisted pair.

28. The invention of claim 23 wherein at least a portion of said mobile transceiver units are communicative with said base transceiver units by spread spectrum means.

29. The invention of claim 23 wherein

at least a portion of said mobile transceiver units are communicative with said base transceiver units by synthesized frequency radio means.

30. The invention of claim 27 wherein

said network of base transceiver units is operable over an RS485 interface.

31. The invention of claim 23 wherein

said network controller providing a multiplicity of data communication ports thereon,

at least three of said communication ports being software-controllable to select among a plurality of interface means,

at least two of said at least three communication ports being selectively controllable to communicate by RS232, RS422, RS485, and V.35 means.

32. An improved apparatus for collecting, transmitting, and processing data stored in a code such as a bar code, said apparatus including a portable code reader with processing and transmitting units for radiating information in the form of electromagnetic waves, a stationary receiver physically separated from the code reader, and a data processor coupled to the stationary receiver, wherein the improvement comprises:

a network controller member having a multiplicity of communication ports thereon;

said network controller member intercommunicative with said data processor at one of said communication ports;

said network controller member intercommunicative with said stationary receiver at another of said communication ports; and

said network controller member selectively operable with said data processor at one or more communication rates.

33. The invention of claim 32 wherein

said network controller member selectively operable with said stationary receiver at one or more communication rates.

34. The invention of claim 32 wherein

said network controller selectively intercommunicative with a diagnostic device over one of said communication ports.

35. The invention of claim 32 wherein

a second data processor associated with said network controller and intercommunicative therewith.

36. The invention of claim 32 wherein

a multiplicity of stationary receivers intercommunicative with said network controller.

37. The invention of claim 32 wherein

said network controller selectively operable to communicate with said data processor at more than one data transfer rate.